

3^d Weather Squadron

Integrity - Service - Excellence



Air Traffic Control Weather Certification

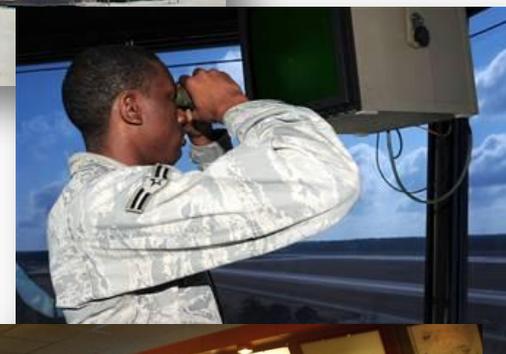
*Mr B.J. Ortnor, 3 WS/DOV
Weather Forecaster*

Current as of: 9 April 2012



Overview

- Requirements/References
- RGAAF (KGRK) Observations
- HAAF (KHLR) Observations
- Cooperative Weather Watch
- Visibility
- Significant Weather
- Dissemination of Weather Information
- METAR Observation Code & SPECI Criteria
- PIREP Code
- Terminal Aerodrome Forecast
- Weather Watches/Warnings/Advisories





Training Objectives

- To ensure all ATC personnel are able to take limited surface weather observations
- To ensure all ATC personnel understand the Cooperative Weather Watch (CWW) Program
- To educate all ATC personnel on weather observations and other weather products produced/disseminated in support of Fort Hood aviation/ground operations



Requirements/References

- **FM3-04.303** *Air Traffic Services Facility Operations, Training, Maintenance, and Standardization (2-65.)*
 - In accordance with **AR115-10 (AFI15-157)** *Weather Support for the U.S. Army*, local weather service authorities [3d Weather Squadron] will provide a practical training program to certify air traffic controllers as limited weather observers
 - Controllers shall perform weather observations as a secondary function; their **primary** function is ATC
- **AFMAN15-111** *Surface Weather Observations (2.7.2.)*
 - Weather technicians will task-certify ATC personnel to evaluate prevailing visibility values from the control tower
 - Weather technicians will also ensure ATC personnel can operate the applicable weather equipment in ATC facilities



Requirements/References

- **FH Reg 115-1** *Weather Support to III Corps and Fort Hood*
 - Defines responsibilities of:
 - 3 WS (RGAAF Weather Station)
 - Directorate of Aviation Operations (DAO)
 - Defines the Cooperative Weather Watch (CWW) Program





RGAAF (KGRK) Observations



- RGAAF weather station provides manual weather observations for **KGRK** IAW AFMAN15-111 (10Mar09)
 - A position qualified weather technician is responsible for observing, evaluating, and preparing METAR/SPECI observations 24/7
 - Sensors are used for “objective” elements (i.e., pressure, temperature, and wind)
 - Manual observing techniques are used for “subjective” elements (i.e., sky condition, visibility, and present weather)
 - SPECI criteria can be found in III Corps & Fort Hood Regulation 115-1, Appendix C

```
14:23:34 02/10/12 2823Z
ROBERT GRAY AIRFIELD NORTH
STATION
NAME: ROBERT GRAY AIRFIELD NORTH
IDENTIFIER: FTND1 DATE: 02/10/12
COMMISSIONED: COM1 TIME: 28:16:31 UTC
ATTENDED: YES UTC TO LST OFFSET: -6
OPEN 24 HOURS: YES METAR SWITCH DATE: 07/01/96 UTC
OPENING TIME: METAR SWITCH TIME: 07/05/00 UTC
CLOSING TIME: DSM GENERATED: YES
ELEVATION: 1015 FEET PRIMARY DSM XMIT TIME: UTC
INTERMED DSM XMIT TIMES: UTC
FIELD ELEVATION: 1015 FEET UTC
PRESSURE SENSOR ELEVATION: 1015 FEET UTC
OBS HOURLY REPORT TIME: 55 NSM GENERATED: YES
OBS EDIT TIME: 2:30 NSM XMIT TIME: UTC
OBS HOURLY TRANSMIT TIME: 57:30 PHYSICAL
SHEP HOURLY TRANSMIT TIME: 22 PRINT
LATITUDE: 31:04N CHANG
LONGITUDE: 97:49W
MAG DECLINATION: 063E EXIT BACK
MULTIPLE ALARMS ARE DISABLED
```



RGAAF (KGRK) Observations

- Official observation point is north of Bldg 90029 (Airfield Ops) midpoint of sidewalk (vicinity of rain gauge)
 - Forecaster may go to end of sidewalk toward the taxiway, but must first contact ATC Tower for approval
 - This location has a 360-degree view of the airfield complex, but hills, airfield buildings, and slope of the runway to the south through northwest restrict view of the sky and/or horizon and horizontal visibility in those directions
 - Glare from medium/high intensity lights may limit ability to make accurate reports of sky conditions at night





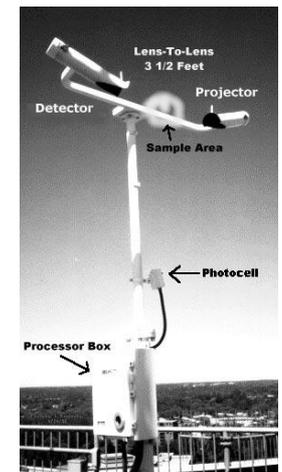
RGAAF (KGRK) Observations

- Weather technicians conduct a basic weather watch (BWW)
 - Weather technicians cannot monitor weather continuously due to other operational duties
 - They may not detect and report all weather changes as they occur, so the BWW program IAW AFMAN 15-111 has been implemented to establish minimum requirements to ensure proper level of weather watch is maintained for flight safety
- **It is important tower personnel notify the weather station anytime they observe conditions different from the current observation or spot significant weather (i.e., tornadoes, lightning, hail, decreasing visibility/ceiling)**



HAAF (KHLR) Observations

- HAAF (**KHLR**) observations fully automated
 - METAR/SPECI observations are collected & disseminated via an Automated Surface Observing System (ASOS)
 - Inherit limitations especially during rapidly changing weather conditions when some delay in reporting cloud ceilings/visibilities may occur
 - An ASOS can only see what is directly over the sensors
- Under certain conditions, manual augmentation or backup to the ASOS at HLR may be required





HAAF (KHLR) Observations

- KHLR ASOS observations are displayed on a dedicated terminal located in the HAAF Tower and a terminal is also located in the RGAAF weather station

EXAMPLE OF THE VDU SCREEN

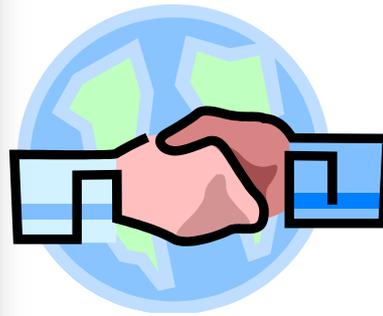
```
09:35:17      08/12/97      HOME TOWN AIRPORT
SKY           BKN075
VSBY         21/2SM      TWR VSBY      3SM
PREWX        HZ          SEAPRES       1024.7
TEMP/DP      20/17 C       RELHUM        43
WIND         090/07 040V120  MAG WIND     110/07 070V140
ALT SET      30.15  DEN ALT  1000  PRES ALT     320
REMARKS      RMK AO2 TWR VIS 3 VIS 13/4V4
SPECIKXXX 121220Z 09007KT 040V120 2 1/2SM HZ BKN075 20/17 A3015
RMK AO2 TWR VIS 3 VIS 1 3/4V4
```

HAAF Tower Display



Cooperative Weather Watch

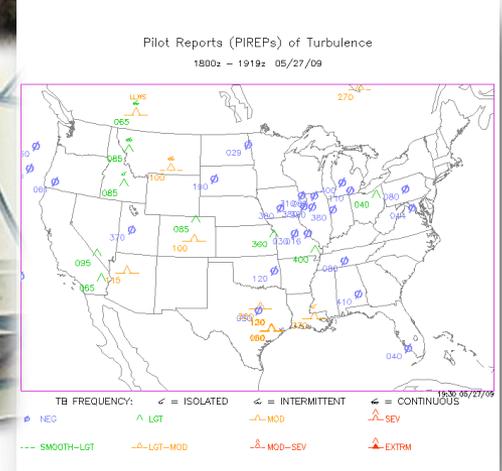
- AFMAN15-111 requires AF weather units to establish a ***cooperative weather watch*** with ATC and other appropriate base/post agencies





Cooperative Weather Watch

- **Of primary concern:**
 - Report of tower visibility different from prevailing surface visibility
 - Local PIREPs
 - Any occurrence of previously unreported weather conditions that could affect flight safety or be critical to the safety or efficiency of other local operations and resources





Cooperative Weather Watch

- ATC directives (i.e., FAAO JO 7110.65, Air Traffic Control) require task certified control tower personnel to make tower prevailing visibility observations when the prevailing visibility at the usual point of observation, or at the tower level, is less than **4 miles**
- Control tower personnel task certified to take visibility observations are instructed by their agency to **notify** the weather technician when the observed tower prevailing visibility decreases to less than, or increases to equal or exceed **4 miles**



Cooperative Weather Watch

- Tower Personnel Will: **(as ATC duties permit)**
 - Relay sightings of any significant weather (i.e., tornadoes, funnel clouds, lightning, hail, low clouds, rapidly decreasing visibility, etc.)
 - **Relay runway changes (GRK has weather sensors on both ends of runway 15/33)**
 - Relay all PIREPs received
 - Contact weather when HLR ASOS terminals inop or IDS5 (JET) not displaying current weather data
 - Monitor PMSV frequency (UHF 306.5) during weather station equipment outages
 - Provide a radio check (PMSV) daily or upon request
 - Pass significant weather updates to aircrews through flight-following upon request
-



Cooperative Weather Watch

- Weather technicians will notify the tower as soon as possible, whenever the prevailing visibility at the official weather observation point decreases to less than, or increases to equal or exceed **4 miles**
- Re-evaluate surface prevailing visibility, as soon as practicable, upon initial receipt of a differing control tower value, and upon receipt of subsequent reportable changes at the control tower level
- Weather personnel will use control tower values of prevailing visibility as a **guide*** in determining surface visibility when the view of portions of the horizon is obstructed by buildings, aircraft, etc.

**AFMAN15-111 (10March2009) states Tower Visibility can be reported as an optional remark in manual observations only*



Visibility

- ATC regulations require control towers to maintain a visibility checkpoint chart or list of visibility markers posted in the tower
- Upon request, weather units will provide whatever assistance is necessary to help prepare a chart or markers of suitable objects for determining tower visibility





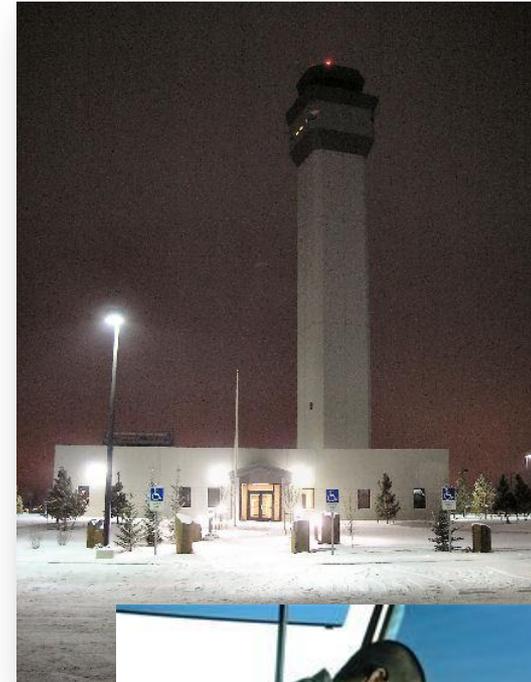
Visibility Definitions

- **Visibility:** Greatest horizontal distance at which selected objects can be seen and identified
- **Prevailing Visibility:** Visibility considered to be representative of the visibility conditions at the official observing point--for manual observations (KGRK) this representative visibility is the greatest visibility equaled or exceeded throughout at least half the horizon circle (not necessarily continuous)
- **Sector Visibility:** Visibility in a specified direction that represents at least a 45 degree arc (portion) of the horizon circle
- **Surface Visibility:** Prevailing visibility determined from the designated point(s); normally represents a value observed at a height of 6 feet above the ground
- **Tower Visibility:** Prevailing visibility determined from the control tower



Visibility Determination

- IAW AFMAN15-111 Tower Visibility may be reported in remarks of manual observations (when tower visibility is **> 4 miles** and is different from surface visibility by a reportable value)
 - Example: TWR VIS 1 ½
 - Encoding of Tower Visibility is optional in manual surface observations (aligns with automated observing systems)





Visibility Determination

- Use all available markers to determine greatest visibility in each direction around the horizon circle
- Before taking visibility observations at night, spend as much time as practicable in the darkness to allow your eyes to become accustomed to limited light
- Evaluate visibility as frequently as practical; using all available visibility markers, determine the greatest distances that can be seen in all directions around the horizon circle

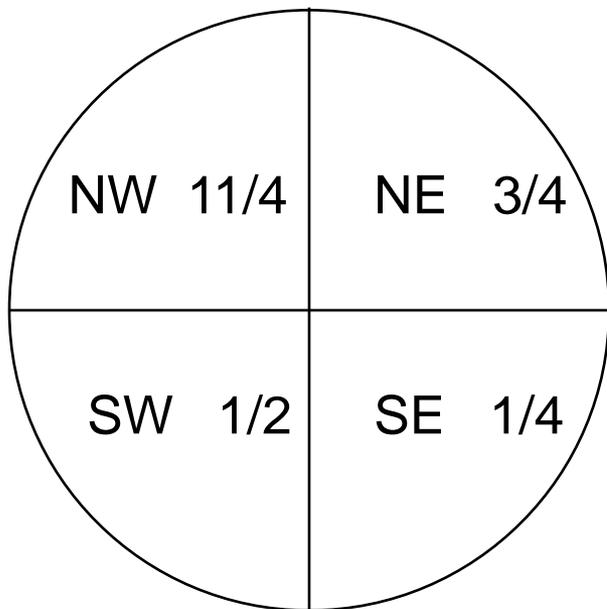


Visibility Determination

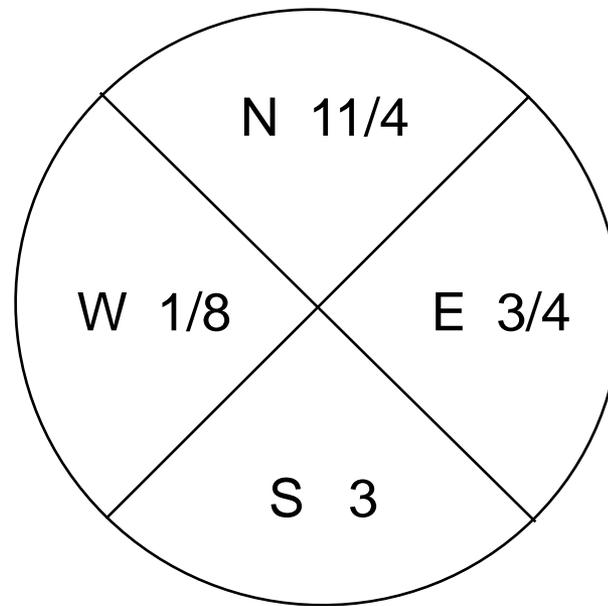
- Estimate farthest distance seen in each direction when visibility is greater than the farthest marker(s)
 - Base this estimate on appearance of all visibility markers
 - If they are visible with sharp outlines and little blurring of color, the visibility is much greater than the distance to them
 - If a marker can barely be seen and identified, the visibility is about the same as the distance to the marker
 - The silhouette of mountains and hills against the sky and the brilliance of stars near the horizon may provide a useful guide to the general clarity of the atmosphere



Visibility Determination



PREVAILING VIS IS: 3/4
SECTOR VIS IS:
SE 1/4 SW 1/2 NW 1 1/4



PREVAILING VIS IS: 1 1/4
SECTOR VIS IS:
E 3/4 S 3 W 1/8



Visibility Determination

– VIS reportable values

- 0 -- 3/8 in 1/16 mile increments
- 1/2 -- 2 in 1/8 mile increments
- 2 -- 3 in 1/4 mile increments
- 3 -- 7 in 1 mile increments





Significant Weather

- Tornado – A violent, rotating column of air **touching the ground**; it forms a pendant, usually from a cumulonimbus cloud
- Funnel Cloud – A violent rotating column of air that **does not touch the ground**





Significant Weather

Tornado, Killeen TX, 25 May 07



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Dissemination of Weather Information

- Weather observations for RGAAF and all Fort Hood weather watches / warnings / advisories are disseminated to ATC via an AF Weather system called JET (Joint Environmental Toolkit)
- JET is connected to IDS5—an ATC communication system
 - Displays weather data (and other ATC information) in RGAAF Tower, ARAC, HLR Tower, and Airfield Ops (RGAAF)
 - The IDS5 display is customizable by the local system manager (DAO-ATC)

JET



IDS5



Types of Observations

- METAR
 - A routine scheduled observation--contains a complete report of wind, visibility, runway visual range, present weather and obscurations, sky condition, temperature, dew point, and altimeter
 - Reported between 55 and 59 past each hour
- SPECI
 - An unscheduled observation completed/disseminated as soon as possible when special criteria has been observed
 - Contain all data elements found in a METAR plus additional remarks that elaborate on data in the body of the report
 - Decode just like a METAR



Observations

Let's look at an example:

KGRK METAR 1855Z 15012G18KT 3SM -TSRA BR SCT003 OVC015
25/21 ALSTG 30.02 RMK TS 3N MOV E PA +888 DA +2388



Observations

Let's look at an example:

KGRK METAR 1855Z 15012G18KT 3SM -TSRA BR SCT003 OVC015
25/21 ALSTG 30.02 RMK TS 3N MOV E PA +888 DA +2388

This is an hourly (METAR) report for RGAAF (KGRK)



Observations

Let's look at an example:

KGRK METAR **1855Z** 15012G18KT 3SM -TSRA BR SCT003 OVC015
25/21 ALSTG 30.02 RMK TS 3N MOV E PA +888 DA +2388

Time of this observation is 1855Z



Observations

Let's look at an example:

KGRK METAR 1855Z **15012G18KT** 3SM -TSRA BR SCT003 OVC015
25/21 ALSTG 30.02 RMK TS 3N MOV E PA +888 DA +2388

**Wind is from the southeast (150 deg) magnetic at 12
knots with gusts (G) to 18 knots**



Observations

Let's look at an example:

KGRK METAR 1855Z 15012G18KT **3SM** -TSRA BR SCT003 OVC015
25/21 ALSTG 30.02 RMK TS 3N MOV E PA +888 DA +2388

Prevailing Visibility is 3 statute miles (SM)



Observations

Let's look at an example:

KGRK METAR 1855Z 15012G18KT 3SM **-TSRA BR** SCT003 OVC015
25/21 ALSTG 30.02 RMK TS 3N MOV E PA +888 DA +2388

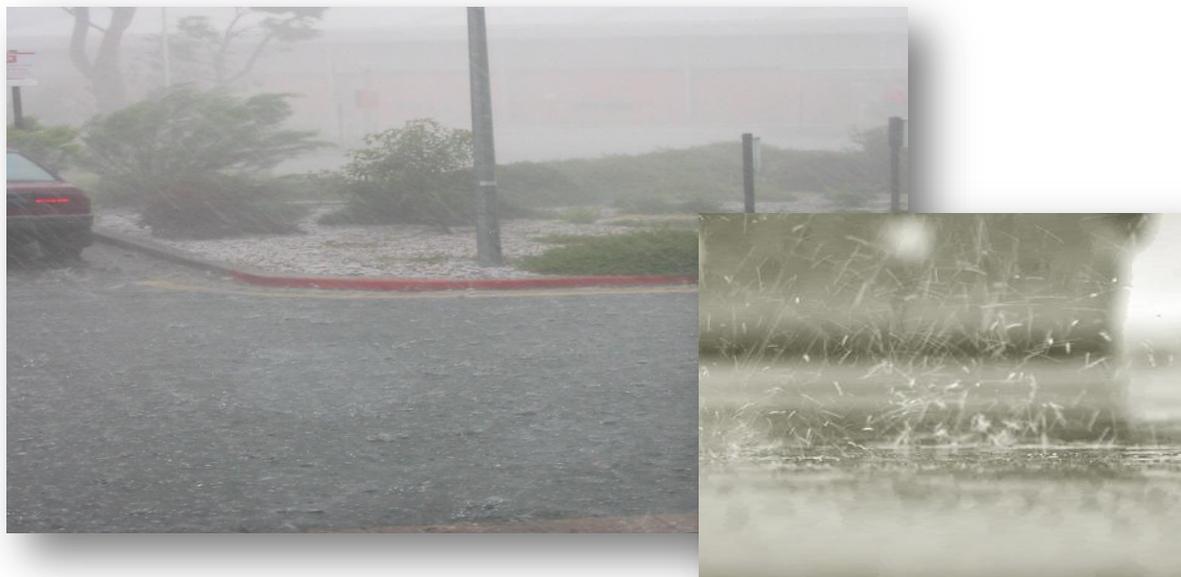
**Present weather is thunderstorm with light rain (-) and
mist (BR) (fog)**



Decoding Observations

Present Weather

- ***Intensity of Precipitation***
 - (-) = Light
 - (no symbol) = Moderate
 - (+) = Heavy
 - (**VC**) = In the Vicinity (within 10 SM of KGRK)





Decoding Observations

Present Weather

- ***Descriptors***

MI	Shallow
PR	Partial
BC	Patches
DR	Drifting
BL	Blowing

SH	Showers
TS	Thunderstorm
+FC	Tornado or Waterspout
FC	Funnel Cloud
FZ	Freezing



Decoding Observations

Present Weather

- Types of Present Weather:**

Type of Present Weather	Reporting Notation	Type of Present Weather	Reporting Notation
Drizzle	DZ	Smoke	FU
Rain	RA	Volcanic Ash	VA
Freezing Rain	FZRA	Dust	DU
Freezing Drizzle	FZDZ	Blowing Dust	BLDU
Snow	SN	Blowing Sand	BLSA
Blowing Snow	BLSN	Haze	HZ
Snow Grains	SG	Blowing Spray	BLPY
Ice Crystals	IC	Well-developed Dust/Sand Whirls	PO
Ice Pellets	PL	Squalls	SQ
Hail 1/4 inch diameter or larger	GR	Funnel Cloud (Tornadoic Activity)	FC
Small Hail and/or Snow Pellets	GS	Sandstorm	SS
Mist Visibility 5/8 SM or greater	BR	Duststorm	DS
Fog Visibility less than 5/8 SM	FG	Thunderstorm (See Note)	TS
Freezing Fog	FZFG		

NOTE: Thunderstorm (TS) is actually a descriptor, but may be reported alone if there is no precipitation associated with it.

less than 1/4 inch diameter



Observations

Let's look at an example:

KGRK METAR 1855Z 15012G18KT 3SM -TSRA BR **SCT003 OVC015**
25/21 ALSTG 30.02 RMK TS 3N MOV E PA +888 DA +2388

The sky condition is scattered clouds at 300 feet AGL (SCT003) and overcast at 1,500 feet AGL (OVC015); the ceiling is 1,500 feet



Decoding Observations Sky Condition

- ***Sky Condition:***

SKC	Sky Clear
FEW	Trace to 2/8 coverage
SCT	3/8 to 4/8 coverage
BKN	5/8 to 7/8 coverage
OVC	8/8 coverage

Cloud Ceiling



Ceiling Definition

The lowest layer reported as broken or overcast indicates a ceiling layer; or if the sky is totally obscured, the vertical visibility is the ceiling.





Observations

Let's look at an example:

KGRK METAR 1855Z 15012G18KT 3SM -TSRA BR SCT003 OVC015
25/21 ALSTG 30.02 RMK TS 3N MOV E PA +888 DA +2388

**The temperature is 25 degrees Celsius and the dew
point is 21 degrees Celsius**



Observations

Let's look at an example:

KGRK METAR 1855Z 15012G18KT 3SM -TSRA BR SCT003 OVC015
25/21 **ALSTG 30.02** RMK TS 3N MOV E PA +888 DA +2388

The altimeter is 30.02 inches



Observations

Let's look at an example:

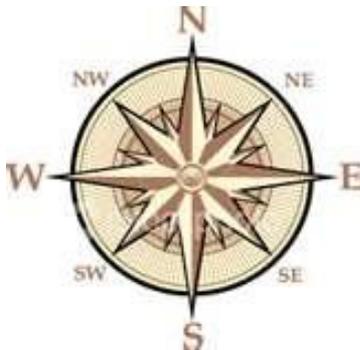
KGRK METAR 1855Z 15012G18KT 3SM -TSRA BR SCT003 OVC015
25/21 ALSTG 30.02 **RMK TS 3N MOV E** PA +888 DA +2388

**Remarks: Thunderstorm is located 3 miles north of
KGRK moving east**



Remarks in Observations

- Use of remarks in manual observations IAW:
 - AFMAN15 -111 (many are optional, so use is dependent on forecaster experience...)
 - FAA handbook 7340.1.
 - Use of remarks in 7340.1 will be given a priority of (National Weather Service (NWS), General (GEN), and ATC
 - Direction will be to 8 points of the compass (i.e., LTG DSNT NW)





Observations

Let's look at an example:

KGRK METAR 1855Z 15012G18KT 3SM -TSRA BR SCT003 OVC015
25/21 ALSTG 30.02 RMK TS 3N MOV E **PA +888 DA +2388**

**Pressure Altitude is +888 feet and Density Altitude is
+2388 feet**



Observations

An example of an Automated Observing Location:

METAR KDYS 271855Z **AUTO** 14016G21KT 10SM CLR 25/16 A2999
RMK **AO2** SLP136 T02470160 **\$**

(AUTO) and (AO2) indicate the observation is generated from an automated system with no human intervention (AO2A would indicate the observation is being augmented by a weather technician)

\$ = Maintenance indicator—maintenance required on the system (*does not necessarily mean any data is bad*)



SPECI Criteria

- ***A SPECI observation is required when:***
 - **VISIBILITY:** Surface visibility (statue miles) as reported in the body of the report decreases to less than or if below, increases to equal or exceed:

RGAAF (GRK)α		HAAF (HLR)α	
3 milesα	AFMAN15-111α	3 milesα	AFMAN15-111α
2-1/2 milesα	FLIPα	2 milesα	AFMAN15-111α
2-1/4 milesα	FLIPα	1 mileα	AFMAN15-111α
2 milesα	AFMAN15-111, FLIPα	3/4 mileα	FLIPα
1-3/4 milesα	FLIPα	1/2 mileα	FLIP (Airfield Minimum)α
1-1/2 milesα	FLIPα	α	α
1-1/4 milesα	FLIPα	α	α
1 mileα	AFMAN15-111, FLIPα	α	α
3/4 mileα	FLIPα	α	α
1/2 mileα	FLIP (Airfield Minimum)α	α	α
1/4 mileα	FLIPα	α	α



SPECI Criteria

- ***A SPECI observation is required when:***
 - **CEILING:** The ceiling (rounded off to reportable values) forms or dissipates below, decrease to less than or if below, increases to equal or exceed:

RGAAF-(GRK)α		HAAF-(HLR)α	
3000 feetα	AFMAN15-111α	3000 feetα	AFMAN15-111α
1500 feetα	AFMAN15-111α	1500 feetα	AFMAN15-111α
1000 feetα	AFMAN15-111α	1000 feetα	AFMAN15-111α
800 feetα	AFMAN15-111, FLIPα	700 feetα	AFMAN15-111, FLIPα
700 feetα	AFMAN15-111, FLIPα	500 feetα	AFMAN15-111, FLIP· (Airfield Minimum)α
600 feetα	FLIPα		
500 feetα	AFMAN15-111, FLIPα	α	α
400 feetα	FLIPα	α	α
300 feetα	FLIPα	α	α
200 feetα	FLIP (Airfield Minimum)α	α	α



SPECI Criteria

- ***A SPECI observation is required when:***
 - **SKY CONDITION:** A layer of clouds or obscuring phenomena aloft is observed below **800 feet AGL** (700 feet AGL for HLR), and no layer aloft was reported below **800 feet AGL** (700 feet AGL for HLR) in the previous METAR or SPECI



SPECI Criteria

- ***A SPECI observation is required when:***
 - **WIND SHIFT:** Wind direction change by 45 degrees or more in less than 15 minutes and the wind speed is 10 knots or more throughout the wind shift
 - **SQUALL:** When squalls occur--A strong wind characterized by a sudden onset, a duration on the order of minutes, then a rather sudden decrease in speed in which the wind speed increases at least 16 knots and is sustained at 22 knots or more for at least one minute
 - **VOLCANIC ERUPTION:** Eruption or volcanic ash cloud first noted



SPECI Criteria

- ***A SPECI observation is required when:***
 - **THUNDERSTORM** (Occurring at the station): A SPECI is not required to report the beginning of a new thunderstorm if one is currently reported.
 - Begins
 - Ends



SPECI Criteria

- ***A SPECI observation is required when:***
 - **PRECIPITATION:** Except for freezing rain, freezing drizzle, hail, and ice pellets, a SPECI is not required for changes in type (i.e., drizzle changing to snow grains) or the beginning or ending of one type while another is in progress (i.e., snow changing to rain and snow).
 - Hail begins or ends
 - Freezing precipitation begins, ends, or changes in intensity
 - Ice Pellets begin, end, or change in intensity
 - Any other type of precipitation begins or ends



SPECI Criteria

- ***A SPECI observation is required when:***
 - **TORNADO, FUNNEL CLOUD, OR WATER SPOUT:** If a Tornado, Funnel Cloud, or Water Spout:
 - Is observed
 - Disappears from sight or ends



SPECI Criteria

- ***A SPECI observation is required when:***

- **RUNWAY VISUAL RANGE (RVR):** Report RVR in body of the observation whenever prevailing visibility is **1SM or less** and/or RVR for **RUNWAY 15 ONLY** is **6,000 feet or less.** (RGAAF only, HAAF does not have RVR capability.)

- Prevailing visibility first observed \leq **1SM**, again when prevailing visibility goes above **1SM**
- RVR for **RNWX 15** decreases to less than or, if below, increases to equal or exceed:

- RVR is first determined as unavailable (**RVRNO**) for **Runway 15**, and when it is first determined RVRNO report is no longer applicable, provided conditions for reporting RVR exist

RGAAF (GRK)α	
6,000 feetα	AFMAN15-111, FLIPα
5,000 feetα	AFMAN15-111, FLIPα
4,000 feetα	FLIPα
2,400 feetα	AFMAN15-111, FLIPα
2,000 feetα	AFMAN15-111α



SPECI Criteria

- ***A SPECI observation is required when:***
 - **UPON RESUMPTION OF OBSERVING FUNCTIONS:** A special (SPECI) observation will be taken within 15-minutes after the weather technician returns to duty following a break in observing coverage at the observing location unless a METAR is filed during that 15-minute period.
 - **AIRCRAFT MISHAP:** Take an aircraft mishap SPECI immediately following notification or sighting of an aircraft mishap **at or near** the observing location unless there has been an intervening observation.
 - **MISCELLANEOUS:** Any other meteorological situation that in the weather technician's opinion is critical.



Pilot Report (PIREP)

- Required information to properly encode and disseminate a PIREP include:
 - Message Type (Routine-UA or Urgent-UUA)
 - Location
 - Time
 - Flight Level
 - Aircraft Type
 - One other element such as (Sky Cover, Weather, Temperature, Wind, Hazards (i.e., Turbulence, Icing, Low-Level Wind Shear))



Pilot Report (PIREP)

- A PIREP is defined as a report of meteorological phenomena encountered by aircraft in flight
- All PIREPS received by ATC should be passed to the RGAAF weather station within **5 minutes** of receipt
- Required information to properly encode/disseminate:
 - Message Type (Routine-UA or Urgent-UUA)
 - Location
 - Time
 - Flight Level
 - Aircraft Type
 - One other element such as (Sky Cover, Weather, Temp, Wind, Hazards (i.e., Turb, Icing, LLWS))



Pilot Report (PIREP)

- **EXAMPLE:**

KGRK UUA OV/KGRK360005/TM 1510/FL015/TP
UH60/WX FV02SM BR/TA 15/WV 18050KT/RM LLWS -
15KT SFC-015 DURC HLR



Pilot Report (PIREP)

- **EXAMPLE:**

KGRK UUA OV/KGRK360005/TM 1510/FL015/TP
UH60/WX FV02SM BR/TA 15/WV 18050KT/RM LLWS -
15KT SFC-015 DURC HLR

Severe PIREP disseminated by RGAAF (KGRK)



Pilot Report (PIREP)

- **EXAMPLE:**

KGRK UUA **OV/KGRK360005**/TM 1510/FL015/TP
UH60/WX FV02SM BR/TA 15/WV 18050KT/RM LLWS -
15KT SFC-015 DURC HLR

**The PIREP was reported by an aircraft located 5 miles
north of KGRK**



Pilot Report (PIREP)

- **EXAMPLE:**

KGRK UUA OV/KGRK360005/**TM 1510**/FL015/TP
UH60/WX FV02SM BR/TA 15/WV 18050KT/RM LLWS -
15KT SFC-015 DURC HLR

The time of the PIREP is 1510Z



Pilot Report (PIREP)

- **EXAMPLE:**

KGRK UUA OV/KGRK360005/TM 1510/**FL015**/TP
UH60/WX FV02SM BR/TA 15/WV 18050KT/RM LLWS -
15KT SFC-015 DURC HLR

The flight level of the aircraft was 1,500 feet MSL



Pilot Report (PIREP)

- **EXAMPLE:**

KGRK UUA OV/KGRK360005/TM 1510/FL015/**TP**
UH60/WX FV02SM BR/TA 15/WV 18050KT/RM LLWS -
15KT SFC-015 DURC HLR

The type of aircraft was a UH-60



Pilot Report (PIREP)

- **EXAMPLE:**

KGRK UUA OV/KGRK360005/TM 1510/FL015/TP
UH60/**WX FV02SM BR**/TA 15/WV 18050KT/RM LLWS -
15KT SFC-015 DURC HLR

The flight level visibility was 2 statute miles in mist (fog)



Pilot Report (PIREP)

- **EXAMPLE:**

KGRK UUA OV/KGRK360005/TM 1510/FL015/TP
UH60/WX FV02SM BR/TA 15/WV 18050KT/RM LLWS -
15KT SFC-015 DURC HLR

The temperature is 15 degrees Celsius



Pilot Report (PIREP)

- **EXAMPLE:**

KGRK UUA OV/KGRK360005/TM 1510/FL015/TP
UH60/WX FV02SM BR/TA 15/**WV 18050KT**/RM LLWS -
15KT SFC-015 DURC HLR

The wind is from the south (180 deg) at 50 knots



Pilot Report (PIREP)

- **EXAMPLE:**

KGRK UUA OV/KGRK360005/TM 1510/FL015/TP
UH60/WX FV02SM BR/TA 15/WV 18050KT/**RM LLWS**
-15KT SFC-015 DURC HLR

Remarks can include anything else the pilot added. In this example, the pilot reported low-level wind shear between the surface and 1,500 feet MSL with a loss in airspeed of 15 knots during climb from Hood AAF



PIREP

- Further information concerning the PIREP code can be found in [AFMAN15-124](#) *Meteorological Codes*, (Chapter 2)





Terminal Aerodrome Forecast (TAF) CODE

**KGRK FCST 0916/1022 16015KT 9999 FEW030 SCT250 QNH3010INS
BECMG 0921/0922 16015G25KT 8000 -SHRA BKN030 OVC250 510003
QNH3005INS
TEMPO 1000/1003 VRB25G35KT 1600 +TSRA BKN015CB OVC030
BECMG 1003/1004 17006KT 9999 NSW SCT050 QNH3008INS
T24/22Z T16/12Z**

- **KGRK**: Location identifier for RGAAF
 - **FCST**: 30-hour forecast
 - **1316-1416**: Forecast valid 9th 1600Z to the 10th 2200Z (UTC)
 - **16015KT**: Forecast wind direction (from) and speed (knots)
 - **9999**: Forecast prevailing visibility (unrestricted in meters = 7+ statute miles)
 - **FEW030**: Clouds less than 3/8th total cloud cover at 3,000 feet AGL
 - **SCT250**: Clouds 3/8 to 4/8ths total cloud cover at 25,000 feet AGL
 - **QNH3010INS**: Forecast minimum altimeter setting (inches of mercury)
 - **BECMG 0921/0922** : Forecast gradual change between 2100 and 2200Z
 - **16015G25KT**: Forecast wind direction/speed/gusts (knots)
 - **8000 -SHRA**: Prevailing visibility (meters = 5 statute miles) in light rain showers
 - **BKN030**: Clouds 5/8 to 7/8ths total cloud cover at 3,000 feet AGL
-



Terminal Aerodrome Forecast (TAF) CODE

**KGRK FCST 0916/1022 16015KT 9999 FEW030 SCT250 QNH3010INS
BECMG 0921/0922 16015G25KT 8000 -SHRA BKN030 OVC250 510003
QNH3005INS
TEMPO 1000/1003 VRB25G35KT 1600 +TSRA BKN015CB OVC030
BECMG 1003/1004 17006KT 9999 NSW SCT050 QNH3008INS
T24/22Z T16/12Z**

- **OVC250**: Clouds 8/8 total cloud cover at 25,000 feet AGL
- **510003**: Turbulence code (Light Turbulence Surface-3,000 feet AGL)
- **QNH3005INS**: Forecast minimum altimeter setting (inches of mercury)
- **TEMPO 1000/1003** : Forecast temporary condition between 0000Z and 0300Z
- **VRB25G35KT**: Forecast wind direction/speed/gusts (knots)
- **1600 +TSRA**: Prevailing visibility (meters = 1 statute mile) in thunderstorm with heavy rain
- **BKN015CB**: Clouds 5/8 to 7/8ths total cloud cover at 1,500 feet AGL with cumulonimbus cloud (thunderstorm)
- **OVC030**: Clouds 8/8 total cloud cover at 3,000 feet AGL



Terminal Aerodrome Forecast (TAF) CODE

**KGRK FCST 0916/1022 16015KT 9999 FEW030 SCT250 QNH3010INS
BECMG 0921/0922 16015G25KT 8000 -SHRA BKN030 OVC250 510003
QNH3005INS
TEMPO 1000/1003 VRB25G35KT 1600 +TSRA BKN015CB OVC030
BECMG 1003/1004 17006KT 9999 NSW SCT050 QNH3008INS
T24/22Z T16/12Z**

- **BECMG 1003/1004:** Forecast gradual change between 0300Z and 0400Z
- **17006KT:** Forecast wind direction/speed/gusts (knots)
- **9999:** Forecast prevailing visibility (unrestricted in meters = 7+ statute miles)
- **NSW:** No significant weather (indicates significant weather no longer expected)
- **SCT050:** Clouds 3/8 to 4/8ths total cloud cover at 5,000 feet AGL
- **QNH3008INS:** Forecast minimum altimeter setting (inches of mercury)
- **T24/22Z:** Forecast maximum temperature and time
- **T16/12Z:** Forecast minimum temperature and time



Terminal Aerodrome Forecast (TAF) CODE

- Further information concerning the TAF code can be found in [AFMAN15-124](#) *Meteorological Codes*, (Chapter 1)





Weather Watch

26th OWS IWWC WEATHER WATCH FOR FORT HOOD (KGRK) #09-A008

VALID 02/1500Z (02/1000L) TO 02/2300Z (02/1800L)

POTENTIAL EXISTS FOR DAMAGING WIND \geq 50 KTS AND LARGE HAIL \geq 3/4 IN.

THIS WATCH IS VALID FOR THE ENTIRE FORT HOOD RESERVATION. A WEATHER WARNING WILL BE ISSUED LATER, IF REQUIRED.

- **26th OWS IWWC WEATHER WATCH FOR FORT HOOD (KGRK) #09-A008:**

Eighth weather watch issued by 26 OWS for month of September

- **VALID 02/1500Z (02/1000L) TO 02/2300Z (02/1800L):** Forecast valid time of the watch conditions

- **POTENTIAL EXISTS FOR DAMAGING WIND \geq 50 KTS AND HAIL \geq 3/4 IN. THIS WATCH IS VALID FOR THE ENTIRE FORT HOOD RESERVATION. A WEATHER WARNING WILL BE ISSUED LATER, IF REQUIRED.:** Specific Watch criteria.



Weather Warning

26th OWS IWWC WEATHER WARNING FOR FORT HOOD (KGRK) #04-C005
VALID 09/1500Z (09/0900L) TO 09/2300Z (09/1700L)

DAMAGING WINDS \geq 50 KTS ARE FORECASTED TO OCCUR AT FORT HOOD.
MAXIMUM EXPECTED 60 KTS. LARGE HAIL \geq 3/4 IN IS FORECASTED TO OCCUR AT
FORT HOOD. MAXIMUM MAX EXPECTED 1 INCH.

- **26th OWS IWWC WEATHER WARNING FOR FORT HOOD (KGRK) #04-C005:** Fifth weather warning issued by 26 OWS for month of April
 - **VALID 09/1500Z (09/1000L) TO 09/2300Z (09/1800L):** Forecast valid time of warning conditions
 - **DAMAGING WINDS \geq 50 KTS ARE FORECASTED TO OCCUR AT FORT HOOD. MAXIMUM EXPECTED 60 KTS. LARGE HAIL \geq 3/4 IN IS FORECASTED TO OCCUR AT FORT HOOD. MAXIMUM MAX EXPECTED 1 INCH:** Specific warning criteria to include maximum forecast.
-



Weather Warning

WEATHER WARNING FOR FORT HOOD (KGRK) #07-010

VALID 25/1500Z (09/0900L) TO UFN (UFN)

A LIGHTNING WARNING IS ISSUED FOR THE ENTIRE FORT HOOD RESERVATION. (THIS INCLUDES LIGHTNING WITHIN 5N/M OF HOOD AND GRAY AAFS). LIGHTNING HAS BEEN OBSERVED IN THIS AREA.

- **WEATHER WARNING FOR FORT HOOD (KGRK) #07-010:** Tenth weather warning issued by 3 WS for month of July
- **VALID 25/1500Z (25/1000L) TO UFN (UFN):** Warning valid until further notice (observed conditions)
- **A LIGHTNING WARNING IS ISSUED FOR THE ENTIRE FORT HOOD RESERVATION. (THIS INCLUDES LIGHTNING WITHIN 5N/M OF HOOD AND GRAY AAFS). LIGHTNING HAS BEEN OBSERVED IN THIS AREA.:** Specific watch criteria



Terminal Weather Advisory

FORT HOOD TERMINAL WEATHER ADVISORY #08-003

VALID 20/1830Z (20/1330L) TO UFN (UFN)

SURFACE WIND GREATER THAN OR EQUAL TO 30 KNOTS AT RGAAF
AND HAAF.

- **#08-003**: Third weather advisory issued by 3 WS for month of August
- **VALID 20/1830Z (20/1330L) TO UFN (UFN)**: Advisory valid until further notice (observed condition)
- **SURFACE WIND GREATER THAN OR EQUAL TO 30 KNOTS AT RGAAF AND HAAF**



3 WS Webpage

www.hood.army.mil/3ws

Links to current
RGAAF / HAAF
observation and
weather
watches,
warnings, and
advisories



3d Weather Squadron

Fort Hood, Texas



"2011 ACC OUTSTANDING BATTLEFIELD WEATHER SQUADRON"



[Gen Leon W. Johnson Memorial 5K Run/Walk](#)

[HOME](#)

To contact us...[3 WS DIRECTORY](#)

TUESDAY, MARCH 27

FORT HOOD WEATHER

[*FORT HOOD WEATHER WATCHES, WARNINGS, AND ADVISORIES \(WWA\)](#)

Click above for active Weather Watches, Warnings, and Advisories for Fort Hood

[*KGRK OBSERVATION & TAF](#)

[*KHLR OBSERVATION](#)

** Denotes .mil access required*

AVIATION WEATHER

[PILOT REPORTS \(PIREPS\)](#)

[AIRMETS/SIGMETS](#)

[SPACE WEATHER IMPACTS](#)

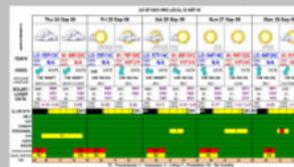
IMAGES BELOW DO NOT DEPICT ACTUAL CONDITIONS
CLICK ON THUMBNAILS FOR CURRENT INFORMATION

MISSION EXECUTION FORECAST/5-DAY FORECAST

Mission Execution Forecast



5-Day Forecast



SATELLITE/RADAR/LIGHTNING/HAZARDS

Satellite Imagery

Fort Hood Doppler Radar

BRIEFINGS

[SEMI-ANNUAL AVIATION WEATHER BRIEF \(SUMMER\)](#)

[SEMI-ANNUAL AVIATION WEATHER BRIEF \(WINTER\)](#)

[AIR TRAFFIC CONTROL WEATHER TRAINING](#)

[MIRF - TEXAS LOW 10JAN2012](#)

[MIRF - FOG EVENT](#)

[PERFORMANCE METRICS: HOW WELL ARE WE FORECASTING?](#)

[DoD WEATHER](#)

This briefing

Primary
Flight
Weather
Forecast
Product



Summary

- **Today you have learned:**
 - RGAAF & HLR Weather Observation Procedures
 - Cooperative Weather Watch
 - Visibility
 - Definitions
 - Determination methods
 - Significant Weather
 - Dissemination of Weather Information
 - How to read...
 - Observations
 - PIREPS
 - TAFS
 - Weather Watches/Warnings/Advisories



Questions?



Condition	Forecast
Stone is Wet	Rain
Stone is Dry	Not Raining
Shadow on Ground	Sunny
White on Top	Snowing
Can't See Stone	Foggy
Swinging Stone	Windy
Stone Jumping Up & Down	Earthquake
Stone Gone	Tornado



Feedback

- Any feedback you can provide will be greatly appreciated and will help us improve your training and the safety of all of our customers; aircraft or otherwise

Weather Operations Center (WOC)

WOC Flight Chief: **288-9166**

Forecaster(s): **288-9620 or 288-9400**

3 WS/DOV: **288-4259**